

Application No. 10/723,796
Response to Final Office Action

Customer No. 01933

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 1 has been amended to more positively recite supplying a dross adhesion inhibitor into a plasma torch head and moving the dross adhesion inhibitor through the plasma torch head to an exhaust nozzle of the plasma torch head through which the plasma arc is formed. And as recited in claim 1, the dross adhesion inhibitor is jetted from the plasma torch head onto a cutting start position of the object material. See the disclosure in the specification at, for example, page 14.

In addition, claim 3 has been amended in a manner similar to claim 1.

Still further, claim 4 has been amended to even more clearly recite that the dross adhesion inhibitor supply flow path is a path for supplying the dross adhesion inhibitor into the plasma torch head, and that the dross adhesion inhibitor flows through the plasma torch head along the assist gas flow path. See, for example, the disclosure in the specification page 12, line 24 to page 15, line 5.

Yet still further, claim 5 has been amended in a similar manner to claim 4 to even more clearly recite that the dross

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adhesion inhibitor supply flow path is a path for supplying the dross adhesion inhibitor into the plasma torch head, and that the dross adhesion inhibitor flows through the plasma torch head along the plasma gas flow path. See, for example, the disclosure in the specification page 15, lines 19-24.

No new matter has been added, and it is respectfully submitted that the amendments to the claims are clarifying in nature. Accordingly, it is respectfully requested that the amendments to claims 1 and 3-5 be approved and entered under 37 CFR 1.116.

THE PRIOR ART REJECTION

Claims 1-3 were again rejected under 35 USC 102 as being anticipated by EP 0 429 671 ("Fujishima"), and claim 4 was rejected under 35 USC 103 as being obvious in view of the previously cited combination of Fujishima and USP 6,335,507 ("Nakata et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

The Examiner contends on page 3 of the Office Action that nozzle 4 of Fujishima for spraying dross adhesion preventive is part of the plasma torch. In addition, the Examiner points out at the top of page 4 of the Office Action that nozzle 4 of Fujishima is positioned near the torch head 1 thereof. Therefore,

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the Examiner asserts that Fujishima discloses jetting dross adhesion inhibitor from the plasma torch.

According to the structure of the present invention as recited in amended independent claim 1, however, the dross adhesion inhibitor is supplied into a plasma torch head, the dross adhesion inhibitor is moved through the plasma torch head to an exhaust nozzle of the plasma torch head through which the plasma arc is formed, and the dross adhesion inhibitor is jetted from the plasma torch head onto a cutting start position of the object material.

Similarly, according to the structure of the present invention as recited in amended independent claim 3, a dross adhesion inhibitor supply unit supplies a dross adhesion inhibitor into the plasma torch head, and the jetting means jets the dross adhesion inhibitor through an exhaust nozzle of the plasma torch head through which the plasma arc is formed onto a cutting start position of the object material.

It is respectfully submitted that even if the disclosure in Fujishima is interpreted as suggested by the Examiner, Fujishima still does not disclose, teach or suggest supplying dross adhesion inhibitor through the plasma torch head to the nozzle through which the plasma arc is formed, and jetting the dross adhesion inhibitor from the plasma torch head, as according to the present invention as recited in amended claims 1 and 3.

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On pages 4 and 5 of the Office Action, the Examiner argues that Fujishima can be interpreted in such a way that the jetting of the dross adhesion inhibitor to the same place on the work piece as the assist gas is jetted or to the same place that the plasma flows towards (i.e. the endpoints of the paths outside of the plasma torch are the same, as in Fujishima) means that the dross adhesion inhibitor supply flow path is connected to the assist gas flow path or the plasma gas flow path, as in the claimed present invention.

According to amended claim 4, however, the dross adhesion inhibitor supply flow path for supplying the dross adhesion inhibitor into the plasma torch head is connected to an assist gas flow path in which an assist gas flows, (the assist gas being jetted from the plasma torch along the plasma arc to assist in cutting of the object material by the plasma arc), and the dross adhesion inhibitor flows through the plasma torch head along the assist gas flow path.

In addition, according to amended claim 5, the dross adhesion inhibitor supply flow path for supplying the dross adhesion inhibitor into the plasma torch head is connected to a plasma gas flow path in which a plasma gas used for forming the plasma arc flows, and the dross adhesion inhibitor flows through the plasma torch head along the plasma gas flow path.

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It is respectfully submitted, therefore, that even if the disclosure in Fujishima is interpreted as suggested by the Examiner, Fujishima still does not disclose, teach or suggest that dross adhesion inhibitor flows through the plasma torch head along the assist gas flow path or along the plasma gas flow path, in the manner of the present invention as recited in amended claims 4 and 5, respectively.

Nakata et al, moreover, has merely been cited for the disclosure of the general idea that assist gas can be used "to effect movement of a dross inhibitor."

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claim 1, amended independent claim 3, and claims 2, 4 and 5 respectively depending therefrom, clearly patentably distinguishes over Fujishima and Nakata et al, taken singly or in combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,



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